

## **What is claimed is:**

**[Claim 1]** 1. We claim a method of increasing neuronal energy production with the use of methyl pyruvate in a human.

**[Claim 2]** 2. We claim a method of increasing neuronal energy production with the use of methyl pyruvic acid in a human.

**[Claim 3]** 3. We claim a method of increasing methyl pyruvate levels and said effects in a human.

**[Claim 4]** 4. We claim a method of increasing methyl pyruvic acid levels and said effects in a human.

**[Claim 5]** 5. We claim the method of claim 2 wherein a therapeutic and effective amount of methyl pyruvic acid is infused or orally administered to the human.

**[Claim 6]** 6. We claim the method of claim 1 wherein a therapeutic and effective amount of the salt of methyl pyruvate is infused or orally administered to the human.

**[Claim 7]** 7. We claim the method of claim 6 wherein the salt of methyl pyruvate is a monovalent cation (such as sodium or potassium methyl pyruvate).

**[Claim 8]** 8. We claim the method of claim 6 wherein the salt of methyl pyruvate is a divalent cation (such as calcium or magnesium methyl pyruvate).

**[Claim 9]** 9. We claim the method of claim 6 wherein analogs of these compounds can act as substrates or substrate analogs for methyl pyruvate.

**[Claim 10]** 10. We claim the method of claim 6 wherein the salt of methyl pyruvate and composition of a pharmacologically acceptable excipient and/or diluent therefore.

**[Claim 11]** 11. We claim the method of claim 9 wherein the salt of methyl pyruvate and composition which further may comprise vitamins, coenzymes, mineral substances, amino acids, herbs and antioxidants or pharmaceutical drugs.

**[Claim 12]** 12. We claim the method of claim 10, infused or orally administrable, in the form of a dietary supplement, energizer or pharmaceutical drug.

**[Claim 13]** 13. We claim the method of claim 11, infused or orally administrable, in the form of a dietary supplement, energizer or pharmaceutical drug.

**[Claim 14]** 14. We claim the method of claim 12, in the form of lozenges, tablets, pills, capsules, powders, granulates, sachets, syrups or vials.

**[Claim 15]** 15. We claim the method of claim 13, in the form of lozenges, tablets, pills, capsules, powders, granulates, sachets, syrups or vials.

**[Claim 16]** 16. We claim the method of claim 14, in unit dosage form, comprising from about 100 mg to about 28 grams, preferably between about .5 grams – 5 grams.

**[Claim 17]** 17. We claim the method of claim 15, in unit dosage form, comprising from about 100 mg to about 28 grams, preferably between about .5 grams – 5 grams.

**[Claim 18]** 18. We claim the method of claim 17, for treating a subject afflicted with amyotrophic lateral sclerosis, comprising administering to the subject an amount of methyl pyruvate salt, such that the subject is treated for amyotrophic lateral sclerosis.

**[Claim 19]** 19. We claim the method of claim 17, for treating a subject afflicted with Parkinson's disease, comprising administering to the subject an amount methyl pyruvate salt, such that the subject is treated for Parkinson's disease.

**[Claim 20]** 20. We claim the method of claim 17, for treating a subject afflicted with Huntington's disease, comprising administering to the subject an amount of methyl pyruvate salt, such that the subject is treated for Huntington's disease.

**[Claim 21]** 21. We claim the method of claim 17, for treating a subject afflicted with Alzheimer's disease, comprising administering to the subject an amount of methyl pyruvate salt, such that the subject is treated for Alzheimer's disease.

**[Claim 22]** 22. We claim the method of claim 17, for treating a subject afflicted with multiple sclerosis, comprising administering to the subject an

amount of methyl pyruvate salt, such that the subject is treated for multiple sclerosis.

**[Claim 23]** 23. We claim the method of claim 5 wherein analogs can act as substrates or substrate analogs for methyl pyruvic acid.

**[Claim 24]** 24. We claim the method of claim 5 wherein methyl pyruvic acid and composition of a pharmacologically acceptable excipient and/or diluent therefore.

**[Claim 25]** 25. We claim the method of claim 23 wherein methyl pyruvic acid and composition which further may comprise vitamins, coenzymes, mineral substances, amino acids, herbs and antioxidants or pharmaceutical drugs.

**[Claim 26]** 26. We claim the method of claim 24, infused or orally administrable, in the form of a dietary supplement, energizer or pharmaceutical drug.

**[Claim 27]** 27. We claim the method of claim 25, infused or orally administrable, in the form of a dietary supplement, energizer or pharmaceutical drug.

**[Claim 28]** 28. We claim the method of claim 26, in the form of lozenges, tablets, pills, capsules, powders, granulates, sachets, syrups or vials.

**[Claim 29]** 29. We claim the method of claim 27, in the form of lozenges, tablets, pills, capsules, powders, granulates, sachets, syrups or vials.

**[Claim 30]** 30. We claim the method of claim 28, in unit dosage form, comprising from about 100 mg to about 28 grams, preferably between about .5 grams – 5 grams.

**[Claim 31]** 31. We claim the method of claim 29, in unit dosage form, comprising from about 100 mg to about 28 grams, preferably between about .5 grams – 5 grams.

**[Claim 32]** 32. We claim the method of claim 31, for treating a subject afflicted with amyotrophic lateral sclerosis, comprising administering to the subject an amount of methyl pyruvic acid, such that the subject is treated for amyotrophic lateral sclerosis.

**[Claim 33]** 33. We claim the method of claim 31, for treating a subject afflicted with Parkinson's disease, comprising administering to the subject an amount of methyl pyruvic acid, such that the subject is treated for Parkinson's disease.

**[Claim 34]** 34. We claim the method of claim 31, for treating a subject afflicted with Huntington's disease, comprising administering to the subject an amount of methyl pyruvic acid, such that the subject is treated for Huntington's disease.

**[Claim 35]** 35. We claim the method of claim 31, for treating a subject afflicted with Alzheimer's disease, comprising administering to the subject an amount of methyl pyruvic acid, such that the subject is treated for Alzheimer's disease.

**[Claim 36]** 36. We claim the method of claim 31, for treating a subject afflicted with multiple sclerosis, comprising administering to the subject an

amount of methyl pyruvic acid, such that the subject is treated for multiple sclerosis.

**[Claim 37]** 37. We claim the method of claim 17, for protecting a human central nervous system against neuronal degeneration caused by a defect in at least one intracellular energy metabolic enzyme, comprising the step of administering to a human at risk of such neuronal degeneration a therapeutically effective quantity of said substance to neurons to promote oxidative metabolism.

**[Claim 38]** 38. We claim the method of claim 31, for protecting a human central nervous system against neuronal degeneration caused by a defect in at least one intracellular energy metabolic enzyme, comprising the step of administering to a human at risk of such neuronal degeneration a therapeutically effective quantity of said substance to neurons to promote oxidative metabolism.

**[Claim 39]** 39. We claim the method of claim 17, which further comprises Creatine compounds, which can be used in the present method include (1) creatine, creatine phosphate and analogs of these compounds which can act as substrates or substrate analogs for creatine kinase; (2) bisubstrate inhibitors of creatine kinase comprising covalently linked structural analogs of adenosine triphosphate (ATP) and creatine; (3) creatine analogs which can act as reversible or irreversible inhibitors of creatine kinase; and (4) N-phosphorocreatine analogs bearing non-transferable moieties which mimic the N-phosphoryl group.

**[Claim 40]** 40. We claim the method of claim 31, which further comprises Creatine compounds, which can be used in the present method include (1) creatine, creatine phosphate and analogs of these compounds which can act as substrates or substrate analogs for creatine kinase; (2) bisubstrate inhibitors

of creatine kinase comprising covalently linked structural analogs of adenosine triphosphate (ATP) and creatine; (3) creatine analogs which can act as reversible or irreversible inhibitors of creatine kinase; and (4) N-phosphorocreatine analogs bearing non-transferable moieties which mimic the N-phosphoryl group.

[Claim 41] 41. We claim the method of claim 17, for protecting a human central nervous system against neuronal degeneration triggered by an ischemic event, comprising the step of injecting, into the bloodstream of a human at risk of ischemic damage, a therapeutically effective quantity.

[Claim 42] 42. We claim the method of claim 31, for protecting a human central nervous system against neuronal degeneration triggered by an ischemic event, comprising the step of injecting, into the bloodstream of a human at risk of ischemic damage, a therapeutically effective quantity.

[Claim 43] 43. We claim the method of claim 41 wherein administered to the human in conjunction with insulin.

[Claim 44] 44. We claim the method of claim 42 wherein administered to the human in conjunction with insulin.